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Confirmation No.: 3586

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE  
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES**

Applicants: Wollenberg et al. Examiner: M. Wallenhorst  
Serial No.: 10/699,507 Group: Art Unit 1743  
Filing Date: October 31, 2003 Docket: T-6298D (538-63)  
For: HIGH THROUGHPUT SCREENING Dated: May 5, 2006  
METHODS FOR LUBRICATING OIL  
COMPOSITIONS

MAIL STOP APPEAL BRIEF-PATENTS  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

**TRANSMITTAL OF APPELLANTS' BRIEF**

Sir:

Enclosed please find APPELLANTS' BRIEF.

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Also, please charge any deficiency as well as any other fee(s) which may become due under 37 C.F.R. § 1.17, or credit any overpayment of such fee(s) to Deposit Account No. 50-3591. Also, in the event any additional extensions of time are required, please treat this paper as a petition to extend the time as required and charge Deposit Account No. 50-3591. TWO (2) COPIES OF THIS SHEET ARE ENCLOSED.

Respectfully requested.

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Serial No.:	10/699,507	Group:	Art Unit 1743
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MAIL STOP APPEAL BRIEF-PATENTS

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**APPELLANTS' BRIEF**

Sir:

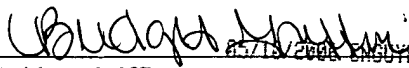
In response to the final Office Action dated November 4, 2005 and the Advisory Action dated February 16, 2006, Applicants appeal pursuant to the Notice of Appeal filed on March 3, 2006 and received in the U.S. Patent and Trademark Office on March 6, 2006. Pursuant to 37 C.F.R. §41.37, one copy of this brief is submitted in connection with the appeal which has been taken herein.

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**CERTIFICATE OF MAILING UNDER 37 C.F.R. §1.8(a)**

I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail, postpaid in an envelope, addressed to the: MAIL STOP APPEAL BRIEF-PATENTS Commissioner for Patents, Alexandria, VA 22313-1450 on May 5, 2006.

Dated: May 5, 2006

  
Bridget Griffin  
01 FC:1402 500.00 DA 10699507

(1) **REAL PARTY IN INTEREST**

The real party in interest for this application is Chevron Oronite Company LLC.

(2) **RELATED APPEALS AND INTERFERENCES**

There are no other related appeals or interferences for this application.

(3) **STATUS OF CLAIMS**

Claims 1-45 are pending, stand rejected and are under appeal. All of these claims have been finally rejected and constitute the claims on appeal.

A copy of Claims 1-45 as pending is presented in the Appendix.

(4) **STATUS OF AMENDMENTS**

Appellants' claims were finally rejected in a final Office Action mailed November 4, 2005. Appellants' submitted an Amendment on February 3, 2006 in response to the final Office Action. An Advisory Action was mailed on February 16, 2006 in which the Amendment was entered by the Examiner but considered to not place the application in condition for allowance.

(5) **SUMMARY OF CLAIMED SUBJECT MATTER**

The invention of the appealed claims provides a high throughput method for screening lubricating oil additive composition samples under program control (page 3, line 23 through page 4, line 1). The first step of the high throughput method comprises providing a plurality of different lubricating oil additive composition samples comprising at least one

lubricating oil additive, each sample being in a respective one of a plurality of test receptacles (page 6, line 18 through page 10, line 6; page 17, line 5 through page 20, line 12 and Figure 1).

The second step of the high throughput method comprises maintaining each sample at a predetermined temperature for a predetermined time (page 21, lines 12-20). The third step of the high throughput method comprises measuring the storage stability of each sample to provide storage stability data for each sample (page 21, line 21 through page 22, line 13; page 24, line 20 through page 25, line 5 and Figure 2). The fourth step of the high throughput method comprises outputting the results of step (c) (page 25, line 15 through page 26, line 2).

Another invention of the appealed claims provides a high throughput method for screening lubricating oil composition samples under program control (page 4, lines 18 and 19). The first step of the high throughput method comprises providing a plurality of different lubricating oil composition samples comprising (i) a major amount of at least one base oil of lubricating viscosity and (ii) a minor amount of at least one lubricating oil additive, each sample being in a respective one of a plurality of test receptacles (page 6, line 18 through page 15, line 18; page 17, line 5 through page 20, line 12 and Figure 1). The second step of the high throughput method comprises maintaining each sample at a predetermined temperature for a predetermined time (page 21, lines 12-20). The third step of the high throughput method comprises measuring the storage stability of each sample to provide storage stability data for each sample (page 21, line 21 through page 22, line 13; page 24, line 20 through page 25, line 5 and Figure 2). The fourth step of the high throughput method comprises outputting the results of step (c) (page 25, line 15 through page 26, line 2).

The invention of the appealed claims also provides a system for screening lubricant performance under program control (page 4, lines 8 and 9). The system comprises a



plurality of test receptacles, each containing a different lubricating oil composition sample comprising (i) a major amount of at least one base oil of lubricating viscosity and (ii) a minor amount of at least one lubricating oil additive (page 6, line 18 through page 15, line 18; page 17, line 5 through page 20, line 12 and Figure 1); (b) receptacle moving means for individually positioning said test receptacles in a testing station for measurement of storage stability in the respective sample (page 21, line 21 through page 22, line 13 and Figure 2); (c) means for measuring the storage stability in the sample moved to the testing station to obtain storage stability data associated with said sample and for transferring said storage stability data to a computer controller, wherein said computer controller is operatively connected to the means for individually moving the test receptacles (page 21, line 21 through page 22, line 13; page 24, line 20 through page 25, line 5 and Figure 2).

**(6) GROUND OF REJECTION TO BE REVIEWED ON APPEAL**

The grounds of rejection presented in this appeal are the following:

(1) Claims 39-42 stand rejected under 35 U.S.C. §102(e) as being anticipated by Kolosov et al. U.S. Publication No. 2004/0123650 ("Kolosov et al.");

(2) Claims 1-9, 18-29, 38 and 43 stand rejected under 35 U.S.C. §103(a) as being obvious over Kolosov et al. in view of both O'Rear, U.S. Publication No. 2003/0100453 ("O'Rear") and Tolvanen et al. U.S. Patent No. 5,715,046 ("Tolvanen et al.");

(3) Claims 10-13, 30-33 and 44-45 stand rejected under 35 U.S.C. §103(a) as being obvious over Kolosov et al. in view of both O'Rear, and Tolvanen et al. and further in view of Garr et al., U.S. Patent No. 5,993,662 ("Garr et al.");

(4) Claims 14-17 and 34-37 stand rejected under 35 U.S.C. §103(a) as being obvious over Kolosov et al. in view of both O'Rear and Tolvanen et al. and further in view of Smrcka et al., European Patent No. 1,233,361 ("Smrcka et al.");

(5) Claims 1-3, 6, 7, 9, 11, 12, 14, 15, 19, 20, 22, 23, 26, 27, 29, 31, 32, 34, 35, and 38-45 stand provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over Claims 1, 3-9, 15-19 and 24-30 of co-pending Application No. 10/779,422;

(6) Claims 1, 2, 13-18, 20-22 and 33-38 stand provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over Claims 20 and 22-30 of co-pending Application No. 10/699,529;

(7) Claims 1, 2, 13-17, 20, 22, 34-37, 39-42, 44 and 45 stand provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over Claims 1, 3, 10-18, 22 and 23 of co-pending Application No. 10/699,508; and

(8) Claims 1, 2, 20, 22, 39, 41 and 44 stand provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over Claims 1, 13, 19-22 and 33-35 of co-pending Application No. 10/699,509.

**(7) GROUPING OF CLAIMS**

The claims on appeal, i.e., Claims 1-45, are grouped as follows:

- (1) Claims 1-19;
- (2) Claims 20-38; and
- (3) Claims 39-42, 44 and 45; and
- (4) Claim 43.

(8) ARGUMENT

A. Kolosoov et al. Fail to Anticipate  
the System of Appealed Claims 39-42

The Examiner has rejected Claims 39-42 as being anticipated by Kolosoov et al. The Examiner alleges that the Kolosoov et al. reference does teach each and every one of the components recited in instant claims 39-42 since the entire disclosure must be considered, even non-preferred embodiments. The Examiner further alleges that Kolosoov et al teach the general analysis of a large number of diverse compounds and that the compounds analyzed can be lubricants having an additive therein and directs appellants to paragraph nos. 0042-0043 in Kolosoov et al. In order to support the conclusion that Kolosoov et al. anticipates Claims 39-42, the Examiner states that “it is inherent that in a lubricant composition having an additive therein that the base lubricant oil is present in a major amount while the additive is present in a lesser minor amount.”

The Examiner has refused to recognize that it is a well established rule that inherency may not be established by probabilities or possibilities. As summarized in *Continental Can Company USA v. Monsanto Company*, 948 F.2d 1264, 1269, 20 USPQ2d 1746, 1749 (Fed. Cir. 1991), “Inherency, however, may not be established by probabilities or possibilities. The mere fact that a certain thing may result from a given set of circumstances is not sufficient.”

Kolosoov et al. simply disclose a system for screening a library of a multitude of genera of material samples for rheological properties utilizing a large number of broad tests. Exemplary material disclosed in Kolosoov et al. are commercial products, which may be tested or may include ingredients that may be tested therein and include pharmaceuticals, coatings,

cosmetics, adhesives, inks, foods, crop agents, detergents, protective agents, lubricants and the like. Kolosov et al. further disclose that the invention has particular utility in connection with the screening of a number of different material forms including, for example, gels, oils, solvents, greases, creams, foams and other whipped materials, ointments, pastes, powders, films, particles, bulk materials, dispersions, suspensions, emulsions or the like.

The Examiner refuses to acknowledge that lubricating oil compositions do not have to contain a major amount of at least one base oil of lubricating viscosity and a minor amount of at least one lubricating oil additive. In point of fact, a lubricating oil composition can be a concentrate that contains a major amount of a lubricating oil additive and a minor amount of base oil of lubricating viscosity as a diluent for the concentrate. Additionally, the Examiner refuses to acknowledge that a lubricant can be a grease, jelly, e.g., K-Y jelly or petroleum jelly, as well as powders, e.g., dry graphite, PTFE, etc., formulated with water and can be used as is such that all lubricants may not even require an additive or, for that matter, be used in a lubricating oil composition. Thus, Kolosov et al. cannot possibly disclose all of the elements and limitations of the claimed invention. Accordingly, the Examiner's position is untenable and in contrast to Federal Circuit precedent.

Additionally, nothing in Kolosov et al. teach the limitations of appealed dependent Claims 40-42.

As set forth above, the presently claimed system for screening lubricant performance is different than the system in Kolosov et al. Accordingly, appealed Claims 39-42 clearly possess novel subject matter relative to Kolosov et al. and the rejection under 35 U.S.C. §102(e) should be withdrawn.

- B. The Combined References of Kolosov et al., O'Rear, and Tolvanen et al. Fail to Establish the *Prima Facie* Obviousness of the Method and System of Appealed Claims 1-9, 18-29, 38 and 43

1. The Examiner's Position

In the Final Office Action the Examiner applied the references as follows:

Kolosov et al. fail to teach that the lubricants containing additives therein in the combinatorial array can be screened for storage stability by optically measuring the formation of sediments in each of the samples.

\* \* \*

O'Rear teaches that the stability of compositions containing lubricant base oils with and without additives therein can be measured by determining the formation of floc or sediment in the samples during storage at a high temperature for a predetermined time. Stability testing is performed by placing a lubricant oil composition in a heated container, and periodically inspecting the composition for an increase in color or the formation of sediment. See paragraph nos. 0011 and 0034 in O'Rear.

\* \* \*

Tolvanen et al. further teach that the stability of lubricating oil compositions can be determined by measuring the intensity of light scattering from the oil sample surface. The light scattering measurement serves to detect agglomerated particles in the sample. See lines 1-4 and 52-65 in column 2 of Tolvanen et al.

\* \* \*

Based upon a combination of Kolosov et al., O'Rear [and] Tolvanen et al., it would have been obvious to one of ordinary skill in the art at the time of the instant invention to screen the lubricant/additive compositions in the combinatorial array taught by Kolosov et al. for storage stability by optically measuring the formation of sediments in each of the samples since Kolosov et al. teach that the plurality of samples in the array are screened for various material characteristics, and both O'Rear and Tolvanen et al. teach that it is common to screen lubricating oil compositions for their storage stability based upon the amount of sediment that forms in the samples over a predetermined time period at a certain temperature. It also would have been obvious to one of ordinary skill in the art to use optical light scattering as a means for measuring sediment formation in the plurality of lubricating oil compositions present in the array of Kolosov et al. since Tolvanen et al. teach that the measurement of light scatter in an oil sample can be efficiently used to measure the stability of the oil sample by detecting agglomerated particles therein.

## 2. The Appellants Position

Before showing how the Examiner's rejection of the appealed claims fails to make out a *prima facie* case of obviousness, a statement of the legal principles relating to the establishment of *prima facie* obviousness would be worthwhile. *In re Oetiker*, 977 F.2d 1443, 1445, 24 USPQ2d 1443, 1444 (Fed. Cir. 1992) succinctly sets forth the principles as follows:

The *prima facie* case is a procedural tool of patent examination, allocating the burdens of going forward as between examiner and applicant. *In re Spada*, 911 F.2d 705, 707 n.3, 15 USPQ2d 1655, 1657 n.3 (Fed. Cir. 1990). The term "*prima facie* case" refers only to the initial examination step. *In re Piasecki*, 745 F.2d 1468, 1572, 223 USPQ 785, 788 (Fed. Cir. 1984); *In re Rinehart*, 531 F.2d 1048, 1052, 189 USPQ 143, 147 (CCPA 1976). As discussed in *In re Piasecki*, the examiner bears the initial burden, on review of the prior art or on any other ground, of presenting a *prima facie* case of unpatentability. If that burden is met, the burden of coming forward with evidence or argument shifts to the applicant.

After evidence or argument is submitted by the applicant in response, patentability is determined on the totality of the record, by a preponderance of evidence with due consideration to persuasiveness of argument. See *In re Spada*, *supra*; *In re Corkill*, 771 F.2d 1496, 1500, 226 USPQ 1005, 1008 (Fed. Cir. 1985); *In re Caveny*, 761 F.2d 671, 674, 226 USPQ 1, 3 (Fed. Cir. 1985); *In re Johnson*, 747 F.2d 1456, 1460, 223 USPQ 1260, 1263 (Fed. Cir. 1984).

If examination at the initial stage does not produce a *prima facie* case of unpatentability, then without more the applicant is entitled to grant of the patent. See *In re Grabiak*, 769 F.2d 729, 733, 226 USPQ 870, 873 (Fed. Cir. 1985); *In re Rinehart*, *supra*.

*Oetiker* and the cited precedents are clear on this: if it can be shown that the Examiner has failed to make out a *prima facie* case of obviousness, the final rejection herein must be reversed.

It is also well established by the Federal Circuit that obviousness cannot be established by simply combining the teachings of the prior art to produce the claimed invention absent some teaching, suggestion or incentive supporting the combination. *ACS Hospital*

*Systems, Inc. v. Montefiore Hospital*, 732 F.2d 1572, 1577, 221 USPQ 929, 933 (Fed. Cir. 1984);  
*In re Geiger*, 815 F.2d 686, 688, 2 USPQ2d 1276, 1278 (Fed. Cir. 1987).

The U.S. Patent and Trademark Office guidelines for *prima facie* obviousness are set forth in MPEP 2142 (Legal Concept of *Prima Facie* Obviousness) as follows:

...First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations.

These three criteria are not satisfied by the combination of Kolosov et al., O'Rear, and Tolvanen et al. or, for that matter, any of the combination of references cited by the Examiner for at least the following reasons.

a. Appealed Claims 1-9, 18 and 19 Are Distinct  
Over Kolosov et al., O'Rear, and Tolvanen et al.

Nowhere does Kolosov et al. disclose or suggest a high throughput method for screening lubricating oil additive composition samples, under program control, comprising (a) providing a plurality of different lubricating oil additive composition samples comprising at least one lubricating oil additive, each sample being in a respective one of a plurality of test receptacles; (b) maintaining each sample at a predetermined temperature for a predetermined time; (c) measuring the storage stability of each sample to provide storage stability data for each sample; and, (d) outputting the results of step (c) as presently recited in appealed Claim 1.

Rather, Kolosov et al. merely disclose that the present invention may be used to screen or test most any flowable material that may be a commercial product itself or may be an ingredient or portion within a commercial product. Exemplary commercial products, which may be tested or may include ingredients that may be tested according to Kolosov et al. include pharmaceuticals, coatings, cosmetics, adhesives, inks, foods, crop agents, detergents, protective agents, lubricants and the like. Polyelectrolytes or polyampholytes may also be screened.

O'Rear fails to cure the deficiencies of Kolosov et al. Specifically, nowhere does O'Rear disclose or suggest a high throughput method for screening lubricating oil additive composition samples, under program control, comprising (a) providing a plurality of different lubricating oil additive composition samples comprising at least one lubricating oil additive, each sample being in a respective one of a plurality of test receptacles; (b) maintaining each sample at a predetermined temperature for a predetermined time; (c) measuring the storage stability of each sample to provide storage stability data for each sample; and, (d) outputting the results of step (c) as presently recited in appealed Claim 1.

Rather, O'Rear discloses a blend of synthetic and non-synthetic lube base oils wherein the lube base oil product has a greater stability in the absence of additives than the stability of the synthetic lube base oil and has a greater stability in the presence of additives than the non-synthetic lube base oil. O'Rear further discloses that it has remarkably been discovered that these lube base oils can be prepared by blending lube base oils that have poor Oxidator A stabilities but good Oxidator BN stabilities with lube base oils that have the opposite properties such as good Oxidator A stabilities but poor Oxidator BN stabilities. O'Rear goes on to state that surprisingly, the Oxidator A and BN values do not blend linearly, and lube base oils made by blending these components have properties superior to either individual base oil, which were



manually evaluated in the Oxidator A and BN tests in the examples. O'Rear therefore provides a *non-automatic* means to measure the oxidation properties of lubricating oil compositions.

Tolvanen et al. likewise fail to cure the deficiencies of Kolosov et al. Specifically, nowhere does Tolvanen et al. disclose or suggest a high throughput method for screening lubricating oil additive composition samples, under program control, comprising (a) providing a plurality of different lubricating oil additive composition samples comprising at least one lubricating oil additive, each sample being in a respective one of a plurality of test receptacles; (b) maintaining each sample at a predetermined temperature for a predetermined time; (c) measuring the storage stability of each sample to provide storage stability data for each sample; and, (d) outputting the results of step (c) as presently recited in appealed Claim 1.

Rather, Tolvanen et al. disclose a method and a device for determination of the stability or storability of oil, wherein the stability of oil is determined by measuring the intensity of light scattering from the oil surface, when an asphaltene-flocculating liquid is added to the oil sample for determining the stability of the oil. Tolvanen et al. further disclose that it was surprisingly found that by designing the analyzer's measuring cell for oil stability measurement so that measuring takes place through a prism, the drawbacks of methods representing the state of the art could be avoided. Tolvanen et al. goes on to state that when a prism is used there is no open oil sample surface in the measuring device, so the measuring device can be entirely closed. Tolvanen et al., however, provides no suggestion or motivation of a method for screening lubricating oil additive composition samples, under program control, by maintaining each sample at a predetermined temperature for a predetermined time; measuring the storage stability of each sample to provide storage stability data for each sample; and outputting the results.

Most, if not all, inventions arise from a combination of old elements. *In re Rouffet*, 149 F.3d 1350, 1357, 47 USPQ2d 1453, 1457 (Fed. Cir. 1998). However, identification in the prior art of each individual part claimed is insufficient to defeat patentability of the whole claimed invention. *Id.* Rather, to establish obviousness based on a combination of the elements disclosed in the prior art, there must be some motivation, suggestion or teaching of the desirability of making the specific combination that was made by the appellant. *In re Dance*, 160 F.3d 1339, 1343, 48 USPQ2d 1635, 1637 (Fed. Cir. 1998); *In re Gordon*, 733 F.2d 900, 902, 221 USPQ 1125, 1127 (Fed. Cir. 1984).

Appellants employ a high throughput method operated under program control, i.e., one that is automatic, to screen lubricating oil additives for storage stability of each sample to provide storage stability data by maintaining each sample at a predetermined temperature for a predetermined time; measuring the storage stability of each sample to provide storage stability data for each sample; and outputting the results. There is no remote suggestion, motivation or even a hint of this in O'Rear or Tolvanen et al. Instead, O'Rear merely teaches a lubricating oil composition can be tested for oxidation properties via a non-automated test while Tolvanen et al. merely teach that the stability of an oil can be determined by measuring the intensity of light scattering from the oil surface through a prism. However, the presently claimed invention, as set forth in the present claims, employs an automatic high throughput method by maintaining each sample at a predetermined temperature for a predetermined time; measuring the storage stability of each sample to provide storage stability data for each sample; and outputting the results such that a diverse number of lubricating oil additives can be rapidly analyzed and screened.

To remedy the deficiencies of the prior art references, the Examiner alleges that since Kolosov et al. disclose the analysis of lubricant compositions having additives therein as one of the flowable materials by measuring stability parameters such as thermal degradation, aging characteristics and sedimentation of particles in the compositions in a high throughput combinatorial library format, one skilled in the art would be motivated to perform the method and apparatus as recited in the instant claims. The Examiner goes on to state that O'Rear was used as a secondary teaching of the obviousness of measuring the stability of lubricant compositions containing additives therein by determining the formation of floc or sediment in the samples during storage at a high temperature for a predetermined time and the reference to Tolvanen et al. was used as a secondary teaching of the obviousness of determining the stability of lubricating oil compositions by measuring the intensity of light scattering from the oil sample surface.

Thus, it is the Examiner's apparent belief that it would have been obvious to one skilled in the art at the time of the instant invention to screen the lubricant/additive compositions in the combinatorial array taught by Kolosov et al. for storage stability by optically measuring the formation of sediments in each of the samples, since Kolosov et al. teach that the plurality of samples in the array are screened for various material characteristics, and both O'Rear and Tolvanen et al. teach that it is common to screen lubricating oil compositions for their storage stability based upon the amount of sediment that forms in the samples over a predetermined time period at a certain temperature. However, as the court pointed out in *In re Lee*, 277 F.3d 1338, 1342-43, 61 USPQ2d 1430, 1433-34 (CAFC 2002), there must be some teaching, motivation or suggestion to select and combine references relied upon as evidence of obviousness. As is the case here, the Examiner has utterly failed to make out a case of where O'Rear or Tolvanen et al.

provides such teaching, motivation or suggestion to modify the method of Koplov et al. and arrive at the automatic method presently set forth in the appealed claims.

Additionally, nothing in Kolosov et al., O'Rear and Tolvanen et al. teaches or suggests the limitations of dependent Claims 2-9, 18 and 19.

As stated above, O'Rear is directed to a *non-automatic* means to test a lubricating oil composition for its oxidation properties and at no point provides any such disclosure, motivation or even a suggestion of an *automatic* high throughput method and system operated under program control, i.e., one that is automatic, to screen lubricating oil compositions for the oxidation stability of each sample to provide oxidation stability data. Tolvanen et al. is directed to the stability of an oil being determined by measuring the intensity of light scattering from the oil surface through a prism. As such, one skilled in the art would not be motivated by the O'Rear and Tolvanen et al. disclosures to modify the method of Kolosov et al. and arrive at the presently claimed method with any expectation of success. Accordingly, the Examiner has failed to present a *prima facie* case of obviousness and shift the burden of going forward to the appellants, *In re Grabiak*, 769 F.2d 729, 226 USPQ 870 (Fed. Cir. 1985), by failing to establish the motivation to combine Kolosov et al. with O'Rear and Tolvanen et al. Thus, it is respectfully submitted that appealed Claims 1-9, 18 and 19 are nonobvious over the cited references and the rejection should be withdrawn.

b. Appealed Claims 20-29 and 38 Are Distinct  
Over Kolosov et al., O'Rear, and Tolvanen et al.

As acknowledged by the Examiner, Kolosov et al. provide no disclosure or suggestion of a high throughput method for screening lubricating oil composition samples, under program control, comprising (a) providing a plurality of different lubricating oil composition

samples comprising (i) a major amount of at least one base oil of lubricating viscosity and (ii) a minor amount of at least one lubricating oil additive, each sample being in a respective one of a plurality of test receptacles; (b) maintaining each sample at a predetermined temperature for a predetermined time; (c) measuring the storage stability of each sample to provide storage stability data for each sample; and, (d) outputting the results of step (c), as presently recited in appealed Claim 20.

Rather, Kolosov et al. merely disclose a method for screening a library of a multitude of genera of material samples for rheological properties utilizing a large number of broad tests. Exemplary material disclosed in Kolosov et al. are commercial products, which may be tested or may include ingredients that may be tested according to the present invention and include pharmaceuticals, coatings, cosmetics, adhesives, inks, foods, crop agents, detergents, protective agents, lubricants and the like. Kolosov et al. further disclose that the invention has particular utility in connection with the screening of a number of different material forms including, for example, gels, oils, solvents, greases, creams, foams and other whipped materials, ointments, pastes, powders, films, particles, bulk materials, dispersions, suspensions, emulsions or the like.

Thus, not only does Kolosov et al. fail to disclose or suggest a high throughput method for screening lubricating oil compositions, under program control, comprising, *inter alia*, measuring the storage stability of each sample to provide storage stability data for each sample, but also fails to disclose or suggest the step of providing a plurality of different lubricating oil composition samples comprising (i) a major amount of at least one base oil of lubricating viscosity and (ii) a minor amount of at least one lubricating oil additive, each sample being in a respective one of a plurality of test receptacles of appealed Claim 20.

O'Rear fails to cure the deficiencies of Kolosov et al. Specifically, nowhere does O'Rear disclose or suggest a high throughput method for screening lubricating oil composition samples, under program control, comprising (a) providing a plurality of different lubricating oil composition samples comprising (i) a major amount of at least one base oil of lubricating viscosity and (ii) a minor amount of at least one lubricating oil additive, each sample being in a respective one of a plurality of test receptacles; (b) maintaining each sample at a predetermined temperature for a predetermined time; (c) measuring the storage stability of each sample to provide storage stability data for each sample; and, (d) outputting the results of step (c) as presently recited in appealed Claim 20.

Rather, O'Rear discloses a blend of synthetic and non-synthetic lube base oils wherein the lube base oil product has a greater stability in the absence of additives than the stability of the synthetic lube base oil and has a greater stability in the presence of additives than the non-synthetic lube base oil. O'Rear further discloses that it has remarkably been discovered that these lube base oils can be prepared by blending lube base oils that have poor Oxidator A stabilities but good Oxidator BN stabilities with lube base oils that have the opposite properties such as good Oxidator A stabilities but poor Oxidator BN stabilities. O'Rear goes on to state that surprisingly, the Oxidator A and BN values do not blend linearly, and lube base oils made by blending these components have properties superior to either individual base oil, which were manually evaluated in the Oxidator A and BN tests in the examples. O'Rear therefore provides a *non-automatic* means to measure the oxidation properties of lubricating oil compositions.

Tolvanen et al. likewise fail to cure the deficiencies of Kolosov et al. Specifically, nowhere does Tolvanen et al. disclose or suggest a high throughput method for screening lubricating oil additive composition samples, under program control, comprising (a) providing a plurality of different lubricating oil composition samples comprising (i) a major amount of at least one base oil of lubricating viscosity and (ii) a minor amount of at least one lubricating oil additive, each sample being in a respective one of a plurality of test receptacles; (b) maintaining each sample at a predetermined temperature for a predetermined time; (c) measuring the storage stability of each sample to provide storage stability data for each sample; and, (d) outputting the results of step (c) as presently recited in appealed Claim 20.

Rather, Tolvanen et al. disclose a method and a device for determination of the stability or storability of oil, wherein the stability of oil is determined by measuring the intensity of light scattering from the oil surface, when an asphaltene flocculating liquid is added to the oil sample for determining the stability of the oil. Tolvanen et al. further disclose that it was surprisingly found that by designing the analyzer's measuring cell for oil stability measurement so that measuring takes place through a prism, the drawbacks of methods representing the state of the art could be avoided. Tolvanen et al. goes on to state that when a prism is used there is no open oil sample surface in the measuring device, so the measuring device can be entirely closed. Tolvanen et al., however, provides no suggestion or motivation of a method for screening lubricating oil composition samples, under program control, by maintaining each sample at a predetermined temperature for a predetermined time; measuring the storage stability of each sample to provide storage stability data for each sample; and outputting the results.

Most, if not all, inventions arise from a combination of old elements. *In re Rouffet*, 149 F.3d 1350, 1357, 47 USPQ2d 1453, 1457 (Fed. Cir. 1998). However, identification in the prior art of each individual part claimed is insufficient to defeat patentability of the whole claimed invention. *Id.* Rather, to establish obviousness based on a combination of the elements disclosed in the prior art, there must be some motivation, suggestion or teaching of the desirability of making the specific combination that was made by the appellant. *In re Dance*, 160 F.3d 1339, 1343, 48 USPQ2d 1635, 1637 (Fed. Cir. 1998); *In re Gordon*, 733 F.2d 900, 902, 221 USPQ 1125, 1127 (Fed. Cir. 1984).

Appellants employ a high throughput method operated under program control, i.e., one that is automatic, to screen lubricating oil compositions for storage stability of each sample to provide storage stability data by maintaining each sample at a predetermined temperature for a predetermined time; measuring the storage stability of each sample to provide storage stability data for each sample; and outputting the results. There is no remote suggestion, motivation or even a hint of this in O'Rear or Tolvanen et al. Instead, O'Rear merely teaches a lubricating oil composition can be tested for oxidation properties via a non-automated test while Tolvanen et al. merely teach that the stability of an oil can be determined by measuring the intensity of light scattering from the oil surface through a prism. However, the presently claimed invention, as set forth in the present claims, employs an automatic high throughput method by maintaining each lubricating oil composition sample at a predetermined temperature for a predetermined time; measuring the storage stability of each sample to provide storage stability data for each sample; and outputting the results such that a diverse number of lubricating oil composition samples can be rapidly analyzed and screened.



To remedy the deficiencies of the prior art references, the Examiner alleges that since Kolosov et al. disclose the analysis of lubricant compositions having additives therein as one of the flowable materials by measuring stability parameters such as thermal degradation, aging characteristics and sedimentation of particles in the compositions in a high throughput combinatorial library format, one skilled in the art would be motivated to perform the method and apparatus as recited in the instant claims. The Examiner goes on to state that O'Rear was used as a secondary teaching of the obviousness of measuring the stability of lubricant compositions containing additives therein by determining the formation of floc or sediment in the samples during storage at a high temperature for a predetermined time and the reference to Tolvanen et al. was used as a secondary teaching of the obviousness of determining the stability of lubricating oil compositions by measuring the intensity of light scattering from the oil sample surface.

Thus, it is the Examiner's apparent belief that it would have been obvious to one skilled in the art at the time of the instant invention to screen the lubricant/additive compositions in the combinatorial array taught by Kolosov et al. for storage stability by optically measuring the formation of sediments in each of the samples, since Kolosov et al. teach that the plurality of samples in the array are screened for various material characteristics, and both O'Rear and Tolvanen et al. teach that it is common to screen lubricating oil compositions for their storage stability based upon the amount of sediment that forms in the samples over a predetermined time period at a certain temperature. However, as the court pointed out in *In re Lee*, 277 F.3d 1338, 1342-43, 61 USPQ2d 1430, 1433-34 (CAFC 2002), there must be some teaching, motivation or suggestion to select and combine references relied upon as evidence of obviousness. As is the case here, the Examiner has utterly failed to make out a case of where O'Rear or Tolvanen et al.

provides such teaching, motivation or suggestion to modify the method of Koplov et al. and arrive at the automatic method presently set forth in the appealed claims.

Additionally, nothing in Kolosov et al., O'Rear and Tolvanen et al. teaches or suggests the limitations of dependent Claims 21-29 and 38.

As stated above, O'Rear is directed to a *non-automatic* means to test a lubricating oil composition for its oxidation properties and at no point provides any such disclosure, motivation or even a suggestion of an *automatic* high throughput method and system operated under program control, i.e., one that is automatic, to screen lubricating oil compositions for the oxidation stability of each sample to provide oxidation stability data. Tolvanen et al. is directed to the stability of an oil being determined by measuring the intensity of light scattering from the oil surface through a prism. As such, one skilled in the art would not be motivated by the O'Rear and Tolvanen et al. disclosures to modify the method of Kolosov et al. and arrive at the presently claimed method with any expectation of success. Accordingly, the Examiner has failed to present a *prima facie* case of obviousness and shift the burden of going forward to the appellants, *In re Grabiak*, 769 F.2d 729, 226 USPQ 870 (Fed. Cir. 1985), by failing to establish the motivation to combine Kolosov et al. with O'Rear and Tolvanen et al. Thus, it is respectfully submitted that appealed Claims 20-29 and 38 are nonobvious over the cited references and the rejection should be withdrawn.

c. Appealed Claim 43 Is Distinct  
Over Kolosov et al., O'Rear, and Tolvanen et al.

As acknowledged by the Examiner, nowhere in Kolosov is there any disclosure or suggestion of a system for screening lubricant performance, under program control, wherein the system employs a testing station for measuring storage stability, wherein the testing station includes a light source and a photocell aligned with the light source for measuring storage stability in the respective sample each containing a different lubricating oil composition sample comprising (a) a major amount of at least one base oil of lubricating viscosity and (b) a minor amount of at least one lubricating oil additive as generally recited in appealed Claim 43.

Rather, Kolosov et al. merely disclose a system for screening a library of a multitude of genera of material samples for rheological properties utilizing a large number of broad tests. Exemplary material disclosed in Kolosov et al. are commercial products, which may be tested or may include ingredients that may be tested according to the present invention and include pharmaceuticals, coatings, cosmetics, adhesives, inks, foods, crop agents, detergents, protective agents, lubricants and the like. Kolosov et al. further disclose that the invention has particular utility in connection with the screening of a number of different material forms including, for example, gels, oils, solvents, greases, creams, foams and other whipped materials, ointments, pastes, powders, films, particles, bulk materials, dispersions, suspensions, emulsions or the like.

Thus, not only does Kolosov et al. fail to disclose or suggest a high throughput system for screening lubricating oil compositions, under program control, comprising, *inter alia*, wherein the testing station includes a light source and a photocell aligned with the light source for measuring storage stability in the respective sample, but also fails to disclose or suggest a

plurality of test receptacles, each containing a different lubricating oil composition sample comprising (a) a major amount of at least one base oil of lubricating viscosity and (b) a minor amount of at least one lubricating oil additive; as recited in appealed Claim 43.

O'Rear fails to cure the deficiencies of Kolosov et al. Specifically, nowhere does O'Rear disclose or suggest wherein the testing station includes a light source and a photocell aligned with the light source for measuring storage stability in the respective sample each containing a different lubricating oil composition sample comprising (a) a major amount of at least one base oil of lubricating viscosity and (b) a minor amount of at least one lubricating oil additive as generally recited in appealed Claim 43.

Rather, O'Rear discloses a blend of synthetic and non-synthetic lube base oils wherein the lube base oil product has a greater stability in the absence of additives than the stability of the synthetic lube base oil and has a greater stability in the presence of additives than the non-synthetic lube base oil. O'Rear further discloses that it has remarkably been discovered that these lube base oils can be prepared by blending lube base oils that have poor Oxidator A stabilities but good Oxidator BN stabilities with lube base oils that have the opposite properties such as good Oxidator A stabilities but poor Oxidator BN stabilities. O'Rear goes on to state that surprisingly, the Oxidator A and BN values do not blend linearly, and lube base oils made by blending these components have properties superior to either individual base oil, which were manually evaluated in the Oxidator A and BN tests in the examples. O'Rear therefore provides a *non-automatic* means to measure the oxidation properties of lubricating oil compositions.

Tolvanen et al. likewise fail to cure the deficiencies of Kolosov et al. Specifically, nowhere does Tolvanen et al. disclose or suggest wherein the testing station includes a light source and a photocell aligned with the light source for measuring storage stability in the

respective sample each containing a different lubricating oil composition sample comprising (a) a major amount of at least one base oil of lubricating viscosity and (b) a minor amount of at least one lubricating oil additive as generally recited in appealed Claim 43.

Rather, Tolvanen et al. disclose a method and a device for determination of the stability or storability of oil, wherein the stability of oil is determined by measuring the intensity of light scattering from the oil surface, when an asphaltene-flocculating liquid is added to the oil sample for determining the stability of the oil. Tolvanen et al. further disclose that it was surprisingly found that by designing the analyzer's measuring cell for oil stability measurement so that measuring takes place through a prism, the drawbacks of methods representing the state of the art could be avoided. Tolvanen et al. goes on to state that when a prism is used there is no open oil sample surface in the measuring device, so the measuring device can be entirely closed. Tolvanen et al., however, provides no suggestion or motivation of a system for screening lubricating oil composition samples, under program control, by maintaining each sample at a predetermined temperature for a predetermined time; measuring the storage stability of each sample to provide storage stability data for each sample; and outputting the results.

Most, if not all, inventions arise from a combination of old elements. *In re Rouffet*, 149 F.3d 1350, 1357, 47 USPQ2d 1453, 1457 (Fed. Cir. 1998). However, identification in the prior art of each individual part claimed is insufficient to defeat patentability of the whole claimed invention. *Id.* Rather, to establish obviousness based on a combination of the elements disclosed in the prior art, there must be some motivation, suggestion or teaching of the desirability of making the specific combination that was made by the appellant. *In re Dance*, 160 F.3d 1339, 1343, 48 USPQ2d 1635, 1637 (Fed. Cir. 1998); *In re Gordon*, 733 F.2d 900, 902, 221 USPQ 1125, 1127 (Fed. Cir. 1984).

Appellants employ a high throughput system operated under program control, i.e., one that is automatic, to screen lubricating oil compositions for storage stability of each sample to provide storage stability data by maintaining each sample at a predetermined temperature for a predetermined time; measuring the storage stability of each sample to provide storage stability data for each sample; and outputting the results. There is no remote suggestion, motivation or even a hint of this in O'Rear or Tolvanen et al. Instead, O'Rear merely teaches a lubricating oil composition can be tested for oxidation properties via a non-automated test while Tolvanen et al. merely teach that the stability of an oil can be determined by measuring the intensity of light scattering from the oil surface through a prism. However, the presently claimed invention, as set forth in independent Claim 39 from which Claim 43 depends, employs an automatic high throughput system by maintaining each lubricating oil composition sample at a predetermined temperature for a predetermined time; measuring the storage stability of each sample to provide storage stability data for each sample; and outputting the results such that a diverse number of lubricating oil composition samples can be rapidly analyzed and screened.

To remedy the deficiencies of the prior art references, the Examiner alleges that since Kolosov et al. disclose the analysis of lubricant compositions having additives therein as one of the flowable materials by measuring stability parameters such as thermal degradation, aging characteristics and sedimentation of particles in the compositions in a high throughput combinatorial library format, one skilled in the art would be motivated to perform the method and apparatus as recited in the instant claims. The Examiner goes on to state that O'Rear was used as a secondary teaching of the obviousness of measuring the stability of lubricant compositions containing additives therein by determining the formation of floc or sediment in the samples during storage at a high temperature for a predetermined time and the reference to

Tolvanen et al. was used as a secondary teaching of the obviousness of determining the stability of lubricating oil compositions by measuring the intensity of light scattering from the oil sample surface.

Thus, it is the Examiner's apparent belief that it would have been obvious to one skilled in the art at the time of the instant invention to screen the lubricant/additive compositions in the combinatorial array taught by Kolosov et al. for storage stability by optically measuring the formation of sediments in each of the samples, since Kolosov et al. teach that the plurality of samples in the array are screened for various material characteristics, and both O'Rear and Tolvanen et al. teach that it is common to screen lubricating oil compositions for their storage stability based upon the amount of sediment that forms in the samples over a predetermined time period at a certain temperature. However, as the court pointed out in *In re Lee*, 277 F.3d 1338, 1342-43, 61 USPQ2d 1430, 1433-34 (CAFC 2002), there must be some teaching, motivation or suggestion to select and combine references relied upon as evidence of obviousness. As is the case here, the Examiner has utterly failed to make out a case of where O'Rear or Tolvanen et al. provides such teaching, motivation or suggestion to modify the method of Kolosov et al. and arrive at the automatic system presently set forth in the appealed claim.

As stated above, O'Rear is directed to a *non-automatic* means to test a lubricating oil composition for its oxidation properties and at no point provides any such disclosure, motivation or even a suggestion of an *automatic* high throughput method and system operated under program control, i.e., one that is automatic, to screen lubricating oil compositions for the oxidation stability of each sample to provide oxidation stability data. Tolvanen et al. is directed to the stability of an oil being determined by measuring the intensity of light scattering from the oil surface through a prism. As such, one skilled in the art would not be motivated by the O'Rear

and Tolvanen et al. disclosures to modify the system of Kolosov et al. and arrive at the presently claimed method with any expectation of success. Accordingly, the Examiner has failed to present a *prima facie* case of obviousness and shift the burden of going forward to the appellants, *In re Grabiak*, 769 F.2d 729, 226 USPQ 870 (Fed. Cir. 1985), by failing to establish the motivation to combine Kolosov et al. with O'Rear and Tolvanen et al. Thus, it is respectfully submitted that appealed Claim 43 is nonobvious over the cited references and the rejection should be withdrawn.

C.     The Combined References of Kolosov et al., O'Rear,  
Tolvanen et al. and Garr et al. Fail to Establish the  
*Prima Facie* Obviousness of the Method and System  
of Appealed Claims 10-13, 30-33, 44 and 45

The foregoing deficiencies of Kolosov et al., O'Rear and Tolvanen et al. discussed above with respect to the rejections of appealed Claims 1, 20 and 39, from which appealed Claims 10-13, 30-33 and 44-45 ultimately depend, apply with equal force to this rejection.

Garr et al. does not cure and is not cited as curing the above-noted deficiencies of Kolosov et al., O'Rear and Tolvanen et al. Specifically, nowhere does Garr et al. disclose or suggest a high throughput method for screening lubricating oil additive composition samples, under program control, comprising (a) providing a plurality of different lubricating oil additive composition samples comprising at least one lubricating oil additive, each sample being in a respective one of a plurality of test receptacles; (b) maintaining each sample at a predetermined temperature for a predetermined time; (c) measuring the storage stability of each sample to provide storage stability data for each sample; and, (d) outputting the results of step (c) as presently recited in appealed Claim 1. Nor does Garr et al. disclose or suggest a high throughput



method for screening lubricating oil composition samples, under program control, comprising (a) providing a plurality of different lubricating oil composition samples comprising (i) a major amount of at least one base oil of lubricating viscosity and (ii) a minor amount of at least one lubricating oil additive, each sample being in a respective one of a plurality of test receptacles; (b) maintaining each sample at a predetermined temperature for a predetermined time; (c) measuring the storage stability of each sample to provide storage stability data for each sample; and, (d) outputting the results of step (c), as presently recited in appealed Claim 20. Nor, for that matter, does Garr et al. disclose or suggest a system for screening lubricant performance, under program control, comprising (a) a plurality of test receptacles, each containing a different lubricating oil composition sample comprising (i) a major amount of at least one base oil of lubricating viscosity and (ii) a minor amount of at least one lubricating oil additive; (b) receptacle moving means for individually positioning said test receptacles in a testing station for measurement of storage stability in the respective sample; (c) means for measuring the storage stability in the sample moved to the testing station to obtain storage stability data associated with said sample and for transferring said storage stability data to a computer controller, wherein said computer controller is operatively connected to the means for individually moving the test receptacles as generally recited in appealed Claim 39.

Rather, Garr et al. is simply cited for the disclosure of employing a bar code to identify individual containers. Nothing in Garr et al. provide any suggestion, motivation or even a hint of a high throughput method and system for screening a plurality of lubricating oil additives or lubricating oil composition samples, under program control, by measuring the storage stability of each sample and outputting the results. Thus, nothing in Garr et al. would lead one skilled in the art to modify the system and method of Kolosov et al. in view of O'Rear

and Tolvanen et al. by looking to the disclosure of Garr et al. and arrive at the claimed high throughput method and system for screening lubricating oil composition, under program control, by measuring the storage stability of each sample and outputting the results.

Since Kolosov et al., O'Rear and Tolvanen et al, alone or in combination with Garr et al., do not disclose or suggest the presently claimed invention, appealed Claims 10-13, 30-33 and 44-45 are believed to be nonobvious over Kolosov et al., O'Rear, Tolvanen et al, and Garr et al. and the rejection should be withdrawn.

D. The Combined References of Kolosov et al., O'Rear, Tolvanen et al. and Smrcka et al. Fail to Establish the *Prima Facie* Obviousness of the Method of Appealed Claims 14-17 and 34-37

The foregoing deficiencies of Kolosov et al., O'Rear and Tolvanen et al. discussed above with respect to the rejections of appealed Claims 1 and 20, from which appealed Claims 14-17 and 34-37 depend, apply with equal force to this rejection.

Smrcka et al. does not cure and is not cited as curing the above-noted deficiencies of Kolosov et al., O'Rear and Tolvanen et al. Specifically, nowhere does Smrcka et al. disclose or suggest a high throughput method for screening lubricating oil additive composition samples, under program control, comprising (a) providing a plurality of different lubricating oil additive composition samples comprising at least one lubricating oil additive, each sample being in a respective one of a plurality of test receptacles; (b) maintaining each sample at a predetermined temperature for a predetermined time; (c) measuring the storage stability of each sample to provide storage stability data for each sample; and, (d) outputting the results of step (c) as presently recited in appealed Claim 1. Nor does Smrcka et al. disclose or suggest a high

throughput method for screening lubricating oil composition samples, under program control, comprising (a) providing a plurality of different lubricating oil composition samples comprising (i) a major amount of at least one base oil of lubricating viscosity and (ii) a minor amount of at least one lubricating oil additive, each sample being in a respective one of a plurality of test receptacles; (b) maintaining each sample at a predetermined temperature for a predetermined time; (c) measuring the storage stability of each sample to provide storage stability data for each sample; and, (d) outputting the results of step (c), as presently recited in appealed Claim 20.

Rather, Smrcka et al. is merely cited for its disclosure of storing test results in a data carrier. Nothing in Smrcka et al. provide any suggestion, motivation or even a hint of a high throughput method for screening a plurality of lubricating oil additives or lubricating oil composition samples, under program control, by measuring the storage stability of each sample and outputting the results. Thus, nothing in Smrcka et al. would lead one skilled in the art to modify the method of Kolosov et al. in view of O'Rear and Tolvanen et al. by looking to the disclosure of Smrcka et al. and arrive at the presently recited high throughput methods of the present invention, as set forth in the present claims.

Since Kolosov et al., O'Rear and Tolvanen et al, alone or in combination with Smrcka et al., do not disclose or suggest the presently claimed invention, appealed Claims 14-17 and 34-37 are believed to be nonobvious, and therefore patentable, over Kolosov et al., O'Rear, Tolvanen et al. and Smrcka et al. and the rejection should be withdrawn.

E.     The Provisional Rejections Under the Judicially Created  
Doctrines of Obviousness-type Double Patenting

Upon resolution of all outstanding issues remaining in this application, Appellants will submit a Terminal Disclaimer to obviate the provisional rejections.

F.     CONCLUSION

For the foregoing reasons and for all of the reasons of record, it is submitted that appealed Claims 1-45 are patentable over the prior art relied upon by the Examiner. Reversal of the final rejections by the Board is therefore believed to be warranted, such being respectfully requested.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "Michael E. Carmen", is written over the typed name.

Michael E. Carmen

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(9) CLAIMS APPENDIX

1. A high throughput method for screening lubricating oil additive composition samples, under program control, comprising

(a) providing a plurality of different lubricating oil additive composition samples comprising at least one lubricating oil additive, each sample being in a respective one of a plurality of test receptacles;

(b) maintaining each sample at a predetermined temperature for a predetermined time;

(c) measuring the storage stability of each sample to provide storage stability data for each sample; and,

(d) outputting the results of step (c).

2. The method of claim 1, wherein the at least one lubricating oil additive is selected from the group consisting of antioxidants, anti-wear agents, detergents, rust inhibitors, dehazing agents, demulsifying agents, metal deactivating agents, friction modifiers, pour point depressants, antifoaming agents, co-solvents, package compatibilisers, corrosion-inhibitors, ashless dispersants, dyes, extreme pressure agents and mixtures thereof.

3. The method of claim 1, wherein the test receptacles are fabricated from a transparent glass.

4. The method of claim 1, wherein the step (b) of maintaining each sample at a predetermined temperature for a predetermined time is performed at a temperature of from about 20°C to about 80°C.

5. The method of claim 4, wherein the predetermined period of time is at least about one day.

6. The method of claim 1, wherein the step of measuring the storage stability of each sample comprises determining the opacity or light scattering of the sample and comparing the determined opacity or light scattering with the opacity or light scattering of a reference sample.

7. The method of claim 6, wherein the opacity of the sample is determined by measuring the intensity of light passed through a sample.

8. The method of claim 1, further comprising the step of agitating each sample before measuring the storage stability of the sample.

9. The method of claim 1, wherein the plurality of samples are in a linear array and are sequentially moved to a measuring station between a light source and a photocell for individually measuring the storage stability of each sample.

10. The method of claim 1, wherein each sample has affixed thereto a bar code identifying the sample.

11. The method of claim 10, wherein a robotic assembly selectively retrieves individual test receptacles from an array of test receptacles and individually positions said test receptacles in a testing station for determination of the storage stability.

12. The method of claim 11, wherein said robotic assembly is controlled by a computer.

13. The method of claim 12, wherein the result of step (c) for each sample is transmitted to the computer, the computer compares the result with a predetermined value delimiting a failure or passing of the result, and the computer identifies failed samples to preclude further testing of the failed samples.

14. The method of claim 1, wherein the step of outputting comprises storing the result of step (c) on a data carrier.

15. The method of claim 1, further comprising the step of using the result of step (c) as a basis for obtaining a result of further calculations.

16. The method of claim 14, further comprising the step of transmitting the result of step (c) to a data carrier at a remote location.

17. The method of claim 15, further comprising the step of transmitting the result of further calculations to a data carrier at a remote location.

18. The method of claim 1, wherein the storage stability measurement of step (c) comprises a sedimentation measurement, color measurement or a viscosity measurement.

19. The method of claim 1, wherein the plurality of different lubricating oil additive composition samples further comprise a diluent oil to form an additive concentrate.

20. A high throughput method for screening lubricating oil composition samples, under program control, comprising:

(a) providing a plurality of different lubricating oil composition samples comprising (i) a major amount of at least one base oil of lubricating viscosity and (ii) a minor amount of at least one lubricating oil additive, each sample being in a respective one of a plurality of test receptacles;

(b) maintaining each sample at a predetermined temperature for a predetermined time;

(c) measuring the storage stability of each sample to provide storage stability data for each sample; and,

(d) outputting the results of step (c).

21. The method of claim 20, wherein the base oil is a natural or synthetic oil.

22. The method of claim 20, wherein the lubricating oil additive is selected from the group consisting of antioxidants, anti-wear agents, detergents, rust inhibitors, dehazing agents, demulsifying agents, metal deactivating agents, friction modifiers, pour point depressants, antifoaming agents, co-solvents, package compatibilisers, corrosion-inhibitors, ashless dispersants, dyes, extreme pressure agents and mixtures thereof.



23. The method of claim 20, wherein the test receptacles are fabricated from a transparent glass.

24. The method of claim 20, wherein the step (b) of maintaining each sample at a predetermined temperature for a predetermined time is performed at a temperature of from about 20°C to about 80°C.

25. The method of claim 24, wherein the predetermined period of time is at least about one day.

26. The method of claim 20, wherein the step of measuring the storage stability of each sample comprises determining the opacity or light scattering of the sample and comparing the determined opacity or light scattering with the opacity or light scattering of a reference sample.

27. The method of claim 26, wherein the opacity of the sample is determined by measuring the intensity of light passed through a sample.

28. The method of claim 20, further comprising the step of agitating each sample before measuring the storage stability of the sample.

29. The method of claim 20, wherein the plurality of samples are in a linear array and are sequentially moved to a measuring station between a light source and a photocell for individually measuring the storage stability of each sample.

30. The method of claim 20, wherein each sample has affixed thereto a bar code identifying the sample.

31. The method of claim 30, wherein a robotic assembly selectively retrieves individual test receptacles from an array of test receptacles and individually positions said test receptacles in a testing station for determination of storage stability.

32. The method of claim 31 wherein said robotic assembly is controlled by a computer.

33. The method of claim 32, wherein the result of step (c) for each sample is transmitted to the computer, the computer compares the result with a predetermined value delimiting a failure or passing of the result, and the computer identifies failed samples to preclude further testing of the failed samples.

34. The method of claim 20, wherein the step of outputting comprises storing the result of step (c) on a data carrier.

35. The method of claim 20, further comprising the step of using the result of step (c) as a basis for obtaining a result of further calculations.

36. The method of claim 34, further comprising the step of transmitting the result of step (c) to a data carrier at a remote location.

37. The method of claim 35, further comprising the step of transmitting the result of further calculations to a data carrier at a remote location.

38. The method of claim 20, wherein the storage stability measurement of step (c) comprises a sedimentation measurement, color measurement or a viscosity measurement.

39. A system for screening lubricant performance, under program control, comprising:

a) a plurality of test receptacles, each containing a different lubricating oil composition sample comprising (a) a major amount of at least one base oil of lubricating viscosity and (b) a minor amount of at least one lubricating oil additive;

b) receptacle moving means for individually positioning said test receptacles in a testing station for measurement of storage stability in the respective sample;

c) means for measuring the storage stability in the sample moved to the testing station to obtain storage stability data associated with said sample and for transferring said storage stability data to a computer controller, wherein said computer controller is operatively connected to the means for individually moving the test receptacles.

40. The system of claim 39, wherein said receptacle moving means comprises a movable carriage.

41. The system of claim 39, wherein the receptacle moving means comprises a robotic assembly having a movable arm for grasping and moving a selected individual receptacle.

42. The system of claim 39, wherein the receptacle moving means comprises means for agitating the test receptacles.

43. The system of claim 39, wherein the testing station includes a light source and a photocell aligned with the light source.

44. The system of claim 39, wherein each test receptacle has a bar code affixed to an outer surface thereof.

45. The system of claim 44, further comprising a bar code reader.